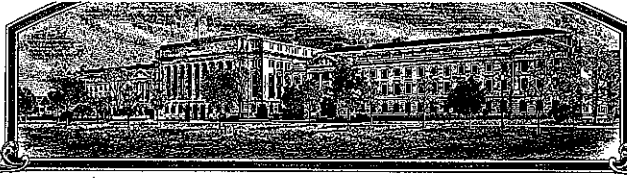


No.

9900126



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

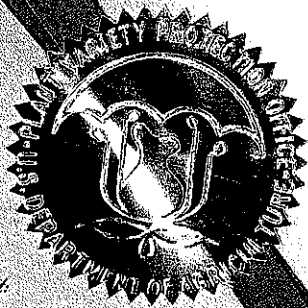
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR SELLING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'54H69'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-fourth day of April, in the year of our Lord two thousand one.

Attest:

Alank Post

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[Signature]
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Pioneer Hi-Bred International, Inc.		Y53H69, LH3	54H69
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9900126
7305 N.W. 62nd Ave. P.O. Box 287 Johnston, IA 50131		(515) 270-3347	
7. GENUS AND SPECIES NAME		6. FAX (include area code)	FILING DATE
Medicago sativa		(515) 270-3750	1/7/99
8. FAMILY NAME (Botanical)		FILING AND EXAMINATION FEE:	
Leguminosae		\$ 2450-	
9. CROP KIND NAME (Common name)		DATE	
Alfalfa		1/7/99	
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)		CERTIFICATION FEE:	
Corporation		\$ 320	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		DATE	
Iowa		4/13/01	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
David J. Miller 7305 N.W. 62nd Ave. P.O. Box 287 Johnston, IA 50131-0287			(515) 270-3347
Mary Letsch 7305 N.W. 62nd Ave Johnston IA 50131			15. FAX (include area code)
Jean M. Bromert 7100 NW 62nd Avenue P.O. Box 1000 Johnston, IA 50131-1000			(515) 270-3750
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
<input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository) <input checked="" type="checkbox"/> Filing and Examination Fee (\$2450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?			
<input checked="" type="checkbox"/> YES (If "yes," give names of countries and dates) <input type="checkbox"/> NO March, 1999, USA			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
David J. Miller			
NAME (Please print or type)		NAME (Please print or type)	
David J. Miller			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Research Coordinator	12/31/98		

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF THE VARIETY

'54H69'

54H69 is a variety synthesized by combining the syn. 1 seed of two experimental lines. It has a total of 221 parent clones. Parents were selected phenotypically for resistance to one or more of the following pests: anthracnose (race 1), bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), spotted alfalfa aphid, Spring Blackstem, and potato leafhopper. In addition, parents were selected for forage yield, fall dormancy, and field appearance. Syn. 1 seed (breeder seed) was formed by mixing equal quantities of seed from the two experimental lines. The experimental lines used had 136 and 85 parent clones respectively. Parent plants trace through several experimental lines primarily to 5347LH, with smaller contributions from 5246, 5252, 5333, 5373 and trace contributions from several other varieties and germplasm.

This variety was observed over three generations and found to be uniform and stable.

No variants were observed during seed (breeder, foundation and commercial) multiplication procedures.

It is confirmed that 54H69 meets presently acceptable levels for uniformity for alfalfa varieties.

EXHIBIT B

NOVELTY STATEMENT

'54H69'

54H69 most closely resembles the variety 5347LH. 54H69 differs from 5347LH primarily in its resistance to the potato leafhopper (54H69 = 45.4%, 5347LH = 26.3%*), and fall dormancy (54H69 = 4 (moderately dormant), 5347LH = 3 (dormant)).

Another trait with difference includes resistance to stem nematode (54H69 = 44.1%, 5347LH = 28.9%).

These two varieties also differ in flower color as 54H69 has 37% purple, 52% variegated, and 10% yellow; while 5347LH has 35% purple and 64% variegated.

*- 5347LH amended to MR to NAAVRB January 1999.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(ALFALFA)

OBJECTIVE DESCRIPTION OF VARIETY
ALFALFA (*Medicago sativa* sensu Gunn et al.)

NAME OF APPLICANT(S) Pioneer Hi-Bred International, Inc.	TEMPORARY DESIGNATION Y53H69, LH3	VARIETY NAME 54H69
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 7305 N.W. 62nd Ave., P.O. Box 287 Johnston, IA 50131		FOR OFFICIAL USE ONLY PVPO NUMBER 9900126

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place numbers in the boxes to designate the expressions which are characteristic of the commercial generations of the application variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Include leading zeros when necessary (e.g. 0 8 9) for quantitative data. Comparative data should be determined from varieties entered in the same trial. Plant color may be precisely designated by using any recognized color chart, e.g., The Munsell Plant Tissue Color Charts.

1. WINTERHARDINESS:

7

CLASS:

1 = Very Non-Winterhardy (CUF 101)

3 = Immediately Non-Winterhardy (Mesilla)

5 = (Du Puits)

7 = (Ranger)

9 = Extremely Winterhardy (Norseman)

2 = Non-Winterhardy (Moapa 69)

4 = Semi-Winterhardy (Lahontan)

6 = Moderately Winterhardy (Saranac)

8 = Winterhardy (Vernal)

TEST LOCATION: Eau Claire, WI

2. FALL DORMANCY:

FALL DORMANCY (DETERMINED FROM SPACED PLANTINGS)

TESTING INSTITUTION AND LOCATION	DATE OF LAST CUT	DATE REGROWTH SCORED	REGROWTH SCORE OR AVERAGE HEIGHT				LSD .05
			APPLICATION VARIETY	CHECK VARIETIES*			
				Legend	Ranger	Archer	
Pioneer Hi-Bred Int'l, Inc. Arlington, WI	09/02/97	10/01/97	26.6	25.4	23.1	31.5	2.6

* CUF 101, Moapa 69, Mesilla, Lahontan, Du Puits, Saranac, Ranger, Vernal, or Norseman as appropriate.

Specify scoring system used: Natural plant height in cm.

5

Fall Growth Habit (Determined from Fall Dormancy Trials)

1 = Erect (CUF 101)

3 = Semierect (Mesilla)

5 = Intermediate (Saranac)

7 = Semidecumbent (Vernal)

9 = Decumbent (Norseman)

3. RECOVERY AFTER FIRST SPRING CUT (In Southwest, first cut after March 21):

5

1 = Very Fast (CUF 101)

3 = Fast (Saranac)

5 = Intermediate (Ranger)

7 = Slow (Vernal)

9 = Very Slow (Norseman)

TEST LOCATION: Arlington, WI

4. AREAS OF ADAPTATION IN U.S. (Where tested and proven adapted):

2

Primary Area of Adaptation

1

Other Areas of Adaptation

1 = North Central

2 = East Central

3 = Southeast

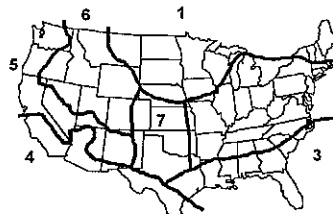
4 = Southwest

5 = Moderately Winterhardy Intermountain

6 = Winterhardy Intermountain

7 = Great Plains

8 = Other (Specify)



5. FLOWERING DATE (When 10% of plants possess open flowers at time of first spring cut):

<input type="text"/>	<input type="text"/>	Days Earlier Than	<input type="text"/>
<input type="text"/>	<input type="text"/>	Same As	<input type="text"/>
<input type="text"/>	<input type="text"/>	Days Later Than	<input type="text"/>

1 = CUF 101

2 = Mesilla

3 = Saranac

4 = Vernal

5 = Norseman

TEST LOCATION:

6. PLANT COLOR (Determined from healthy regrowth 3 weeks after first spring cut, controlling leathoppers if necessary):

☐ 1 = Very Dark Green (524) 2 = Dark Green (Vernal) 3 = Light Green (Ranger)

COLOR CHART VALUE (Specify chart used) _____

3900126

APPLICATION VARIETY: _____

VERNAL: _____

TEST LOCATION: _____

7. CROWN TYPE (Determined from spaced plantings):

☐ Noncreeping Types: 1 = Broad (Vernal) 2 = Intermediate (Saranac) 3 = Narrow (CUF 101)

Creeping Types: 4 = Creeping Rooted (Rangelander) 5 = Rhizomatous (Rhizoma)

8. FLOWER COLOR (Determine frequency of plants for each color class as defined by USDA Agricultural Handbook No. 424 (Barnes 1972), allowing all plants in plot to flower):

☐ 0 ☐ 3 ☐ 7

% Purple and Violet (Subclasses 1.1 to 1.4)

☐ - ☐

% Blue (Subclasses 2.3 and 2.4)

☐ 0 ☐ 5 ☐ 2

% Variegated Other Than Blue (Subclasses 2.1, 2.2, 2.5 to 2.9)

☐ 0 ☐ 1 ☐ 0

% Yellow (Subclasses 4.1 to 4.4)

☐ 0 ☐ 0 ☐ 1

% Cream (Class 3)

☐ ☐ t

% White (Class 5)

TEST LOCATION: Connell, WA

9. POD SHAPE (Determine frequency of plants with the following pod shapes produced on well cross-pollinated racemes):

☐ ☐ ☐

% Tightly Coiled (One or more coils, center more or less closed)

☐ ☐ ☐

% Loosely Coiled (One or more coils, center conspicuously open)

☐ ☐ ☐

% Sickle (Less than 1 coil)

TEST LOCATION: _____

10. PEST RESISTANCE: Provide in the appropriate column, trial data for application variety, and resistant (R) and susceptible (S) check varieties, synthetic generation tested, average severity index scores (ASI), least significant difference statistics (LSD .05), the institution in charge of test, year, and location of test, and whether test is a field or laboratory evaluation. Describe scoring system, and any test procedure which differs from standard methods proposed by Elgin (1982). Trial data from other test years or locations should be presented whenever available on a separate document as Exhibit D. Seeds of the check varieties and germplasm lines listed below can be obtained from the USDA Field Crops Laboratory, Bldg. 001, Rm. 335, BARC-West, Beltsville, MD 20705. Although comparisons with check varieties listed below are preferred, comparisons with any appropriate check variety recommended by Elgin (1982) may be presented.

A. DISEASE RESISTANCE:

A. DISEASE RESISTANCE:							
DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Anthracnose, Race 1 (<i>Colletotrichum trifolii</i>)	Application HR	2	65.9	~125		% Resistant Plants 10.1	Pioneer Hi-Bred Int'l, Inc. 1998 Arlington, WI Laboratory
	Arc (R)		65.0	~125			
	Saranac (S)		0.0	~125			
	SCORING SYSTEM: Standard test						
Anthracnose, Race 2 (<i>Colletotrichum trifolii</i>)	Application						
	Saranac AR (R)						
	Arc (S)						
	SCORING SYSTEM:						
Bacterial Wilt (<i>Corynebacterium insidiosum</i>)	Application HR	2	66.0	~200		% Resistant Plants 11.6	Crop Characteristics 1998 Farmington, MN Field
	Vernal (R)		42.0	~200			
	Narragansett (S)		4.0	~200			
	SCORING SYSTEM: Standard test						
Common Leafspot (<i>Pseudopeziza medicaginis</i>)	Application						
	MSA-CW3An3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						

10. A. PEST RESISTANCE (Continued):

DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Downy Mildew (<i>Peronospora trifoliorum</i>) Isolate, if known:	Application						
	Saranac (R)						
	Kanza (S)						
	SCORING SYSTEM:						
Fusarium Wilt (<i>Fusarium oxysporum</i> <i>f. medicaginis</i>)	Application HR	1	76.4	~150		% Resistant Plants 19.7	Pioneer Hi-Bred Int'l, Inc. 1997 Arlington, WI Field
	Agate (R)		54.0	~150			
	MNGN-1 (S)		7.7	~150			
	SCORING SYSTEM: Standard test						
Phytophthora Root Rot (<i>Phytophthora megasperma</i> <i>f. medicaginis</i>)	Application HR	2	82.5	~160		% Resistant Plants 18.5	Pioneer Hi-Bred Int'l, Inc. 1998 Arlington, WI Laboratory
	Agate (R)		33.0	~160			
	Saranac (S)		0.0	~160			
	SCORING SYSTEM: Standard test						
Verticillium Wilt (<i>Verticillium albo-atrum</i>)	Application R	2	42.7	~125		% Resistant Plants 18.0	Pioneer Hi-Bred Int'l, Inc. 1998 Arlington, WI Laboratory
	Vertus (R)		40.0	~125			
	Saranac (S)		5.3	~125			
	SCORING SYSTEM: Standard test						
Other (Specify) Aphanomyces root rot(R1) (Aphanomyces euteiches)	Application R	2	46.7	~175		% Resistant Plants 9.0	Pioneer Hi-Bred Int'l, Inc. 1998 Arlington, WI Laboratory
	WAPH-1i		50.0	~175			
	Saranac		0.5	~175			
	SCORING SYSTEM: Standard test						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						
B. INSECT RESISTANCE:	VARIETY	SYN. GEN. TESTED	PERCENT DEFOLIATION	DEFOLIATION IN PERCENT OF RESISTANT CHECK	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Alfalfa Weevil (<i>Hypera postica</i>)	Application						
	Arc (R)			100			
	Saranac (S)						
	SCORING SYSTEM:						

10. B. INSECT RESISTANCE (Continued):

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT SEEDLING SURVIVAL	NUMBER OF SEEDLINGS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Blue Alfalfa Aphid (<i>Acyrtosiphon kondoi</i>)	Application						
	CUF101 (HR)						
	Caliverde (S)						
	SCORING SYSTEM:						
Pea Aphid (<i>Acyrtosiphon pisum</i>)	Application R	1	37.9	~300		% Resistant Plants 4.0	Pioneer Hi-Bred Int'l, Inc. 1997 Johnston, IA Laboratory
	Baker (R)		45.0	~300			
	Ranger (S)		9.1	~300			
	SCORING SYSTEM: Standard test						
Spotted Alfalfa Aphid (<i>Therioaphis maculata</i>) Biotype, if known:	Application R	2	31.1	~300		% Resistant Plants 14.9	Pioneer Hi-Bred Int'l, Inc. 1998 Connell, WA Laboratory
	CUF101 (HR)		60.0	~300			
	Arc (S)		2.0	~300			
	SCORING SYSTEM: Standard test						
INSECT	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Potato Leafhopper Yellowing (<i>Empoasca fabae</i>)	Application R	2	45.4	~160		% Resistant Plants 12.0	Pioneer Hi-Bred Int'l, Inc. 1998 Arlington, WI Field
	PLH25 (MR)		25.0	~160			
	Ranger (S)		0.0	~160			
	SCORING SYSTEM: Standard test						
Other (Specify)	Application						
	(S)						
	(S)						
	SCORING SYSTEM: Standard test						
C. NEMATODE RESISTANCE:							
NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Northern Root Knot (<i>Meloidogyne hapla</i>)	Application						
	SYN YY (HR)						
	Lahontan (S)						
	SCORING SYSTEM:						

10. C. NEMATODE RESISTANCE (Continued):

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Southern Root Knot (<i>Meloidogyne incognita</i>)	Application						
	Moapa 69 (R)						
	Lahontan (S)						
	SCORING SYSTEM:						
Stem Nematode (<i>Ditylenchus dipsaci</i>)	Application R	2	44.1	~250		% Resistant Plants 15.9	Pioneer Hi-Bred Int'l, Inc. 1998 Connell, WA Laboratory
	Vernema (R)		60.0	~250			
	Ranger (S)		4.7	~250			
	SCORING SYSTEM: Standard test						
Other (Specify)	Application						
	(R)						
	(S)						
SCORING SYSTEM:							

11. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR EACH OF THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Winterhardiness	Ranger	Plant Color	-
Recovery After 1st Cut	5347LH	Crown Type	-
Area of Adaptation	5454	Combined Disease Resistance	5347LH
Flowering Date	-	Combined Insect Resistance	5347LH

REFERENCES

Barnes, D.K. 1972. A System for Visually Classifying Alfalfa Flower Color. U.S. Dep. Agric. Handb. 424. 18 pp. (Note: Greenish cast of plate 6, A and B is an artifact of printing, actual colors a blend of yellow and white.)

Elgin, J.H., Jr., (ed.). 1982. Standard Tests to Characterize Pest Resistance in Alfalfa Cultivars. U.S. Dep. Agric. Tech. Bull. (In Press).

Gunn, C.R., W.H. Skrdla, and H.C. Spencer. 1978. Classification of *Medicago sativa* L. using legume characters and flower colors. U.S. Dep. Agric. Tech. Bull. 1574. 84 pp.

Munsell Color Co. 1977. Munsell Plant Tissue Color Charts. Munsell Color Co., Inc. Baltimore.

NOTE: Any additional descriptive information and supporting documentation may be provided as Exhibit D.

EXHIBIT D

'54H69'

1) 54H69 is a variety synthesized by combining the syn. 1 seed of two experimental lines. It has a total of 221 parent clones. Parents were selected phenotypically for resistance to one or more of the following pests: anthracnose (race 1), bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), spotted alfalfa aphid, Spring Blackstem, and potato leafhopper. In addition, parents were selected for forage yield, fall dormancy, and field appearance. Syn. 1 seed (breeder seed) was formed by mixing equal quantities of seed from the two experimental lines. The experimental lines used had 136 and 85 parent clones respectively. Parent plants trace through several experimental lines primarily to 5347LH, with smaller contributions from 5246, 5252, 5333, 5373 and trace contributions from several other varieties and germplasm. Germplasm sources are M. falcata (5.9%), Ladak (6.0%), M. varia (24.4%), Turkistan (1.9%), Flemish (34.6%), Chilean (4.4%), Peruvian (trace), KS108GH5 (7.1%), KS94GH6 (2.4), 81IND-2 (2.4), unknown (10.9%).

2) 54H69 is adapted to and intended for use in the north central, east central, and Great Plains regions of the United States. It has been tested in Iowa, Illinois, Minnesota, Wisconsin, and Ontario, Canada.

3) 54H69 is a winterhardy, moderately dormant cultivar with fall dormancy similar to Legend. Flower color in the syn. 2 generation is approximately 37% purple, 52% variegated, 10% yellow and 1% cream with a trace of white.

4) 54H69 has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Phytophthora root rot; resistance to Verticillium wilt, Aphanomyces root rot (race 1); pea aphid, potato leafhopper, stem nematode; and moderate resistance to spotted alfalfa aphid. 54H69 has not been tested for resistance to root knot nematode and blue alfalfa aphid.

5) Seed was produced on vegetative cuttings of the two experimental lines (136 parents bulked, and 85 parents bulked) in the greenhouse in 1996 and in cage isolation in 1997. Seed was bulked equally from the two experimental lines to produce breeder seed (syn 1). Seed classes will be breeder (syn. 1), foundation (syn. 2 or syn. 3), and certified (syn. 2, 3, or 4). Foundation seed may be produced from breeder or foundation seed. The second generation of foundation may be produced at the discretion of Pioneer Hi-Bred International, Inc. Limitations of age of stand will be three and five years respectively for foundation and certified seed. Pioneer Hi-Bred International, Inc. will maintain sufficient breeder seed and foundation seed for the projected life of the variety.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) Pioneer Hi-Bred International, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER Y53H69, LH3	3. VARIETY NAME 54H69
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 7305 N.W. 62nd Ave. P.O. Box 287 Johnston, IA 50131	5. TELEPHONE (include area code) (515) 270-3347 7. PVPO NUMBER	6. FAX (include area code) (515) 270-3750 5000126

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country _____

☒ YES ☐ NO

10. Is the applicant the original breeder? If no, please answer the following:

☒ YES ☐ NO

a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country _____

☐ YES ☐ NO

b. If original rights to variety were owned by a company:

Is the original breeder(s) U.S. based company? If no, give name of country _____

11. Additional explanation on ownership (If needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeders(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter.

Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotope, etc.) should contact the USDA Office of Communications at (202) 720-2791.

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.